

REMARKS

Introduction

The Examiner rejected claims 9-11 on the basis of 35 USC §112. Because applicant cancelled these claims, the section 112 rejection is obviated. Further claims 50 and 51 have been rejected on the basis of obviousness type double patenting. Applicant will consider filing a terminal disclaimer after patentable subject matter has been found. The Examiner rejected all of the claims as anticipated or obvious in view of one reference: US Patent No. 3,656,534 to Bain et al. Applicant has cancelled claims 1-27, 31 and 33-40, amended claims 28, 29, 41 and 47, and has added claims 52-61. Claims 28-30, 32, 41-61 are pending of which claims 28, 41 47, 54 and 58 are independent claims.

The Rejection under 35 USC 102

The '534 patent to Bain et al. does not describe a process which will provide a concentrated or a frozen concentrated liquid whole egg with the viscosity or particle size as claimed. The processing conditions described in the '534 patent are different than those used to produce the claimed concentrated liquid whole egg and as a result, would provide a different final product than the product described in the '534 patent. As will be discussed below, Bain et al. do not describe-

- preheating liquid whole egg prior to concentration;
- a staged heating of eggs where temperature and solids are increasing;
- non-coagulated egg having a particle size as claimed;
- a low viscosity concentrated egg as claimed;
- pasteurization of concentrated egg (as opposed to pasteurization of pre-concentrated egg); and
- the low microbial counts in the concentrated egg.

In the present invention, the concentrated and the frozen concentrated liquid whole eggs are concentrated by a stage heating. The specification specifically describes heating egg through multiple passes over a heated plate (at page 6, lines 9-27):

“Water in the egg is evaporated gradually by gradually heating and evaporating the water in the egg in stages. The surface of the plate has a temperature of about 105°F to about 130°F as the liquid whole egg passes over in it a first pass or stage where exposure of the egg to the plate in the plate heater is for about 8 to about 10 seconds. After the first pass or stage the egg treated in the first stage has a solids level of about 33 weight percent and may be held in a surge tank until it is redirected over the same or another evaporator plate having a surface temperature of about 105°F to about 130°F for about 8 to about 10 seconds. After such a second pass, the resulting concentrated egg will have a solids level of about 42 weight percent. The egg may be continually subjected to such evaporation treatment, such as a third pass, until the solids level of about 33 to about 49 weight percent is reached. The temperature difference between the egg and evaporation plate should not be more than about 3°F to about 6°F. This avoids overheating of the egg and denaturization and/or coagulation of the protein in the egg.”

Temperature, time and thickness of the plates are all important aspects in providing a unique product as claimed in the parent hereto. As indicated at page 6, line 27 to page 7 line 13 of the specification,

“The time and temperature of the pre-heating, the evaporation, and the number of “passes” through the evaporator should be effective for providing a solids level for the liquid whole egg to at least about 33 weight percent, and generally to about 49 weight percent or more without cooking or coagulating the resulting concentrated liquid whole egg. The thickness of the stream of egg flowing over the plate also has to be controlled so that the temperature of the egg flowing over the plate will not be substantially different such that a large temperature gradient does not develop over the thickness of the egg depending upon how far a particular egg particle is from the plate of the plate evaporator. The thickness of the egg flowing over the plate for commercial applications generally may be about 3mm with the egg being heated in three stages in a rising/falling plate evaporator to a temperature of about 130°F for about 8 to about 10 seconds per stage at a flow rate of from about 1.5 to about 4 grams per minute. Generally in three passes, the liquid whole egg may be concentrated to about 49 weight percent solids by heating it at about 130°F for about 24 to about 30 seconds.”

The process described in the ‘534 patent would not provide a non-coagulated liquid whole egg concentrate having the viscosity and microbial properties as claimed.

1. The type of flow in the ‘534 process is different.

In the present invention, concentration is achieved by providing a uniform flow and heating. The ‘534 patent indicates that “liquids are concentrated by subjecting them to a

controlled tortuous path” (column 1, lines 36-37). One of ordinary skill would not expect a turbulent type of process as described in the ‘534 patent to provide a non-coagulated liquid whole egg concentrate as claimed.

2. The flow rate described in the ‘534 process is much higher.

In the present invention as described above, the flow rate of liquid whole egg through the system is about 1.5 to about 4.0 grams per minute. In the ‘534 patent the flow rate of liquid whole egg described in Example 2 (column 4, line 28) is 220 lbs per hour, which is equivalent to 1660 grams per minute. Hence, one of ordinary skill would not expect a rapid flow turbulent type of process as described in the ‘534 patent to provide a non-coagulated liquid whole egg concentrate as claimed.

3. The heating and viscosity in the ‘534 process are different.

In the present invention, heating is important in providing a non-coagulated product with a viscosity as claimed. The ‘534 patent describes concentrating of liquid whole egg at Example 2 (column 4). The example does not provide enough detail to know the time that liquid whole egg would be heated or the viscosity of product at 40°F. However, one of ordinary skill in the art would expect a longer heating time. Further, one of ordinary skill would expect that concentrated eggs having a viscosity of 200 cps at 95°F would have a viscosity greater than 5000 cps at 40°F.

4. The ‘534 process pasteurized prior to concentrating.

In the process of the present invention, the product is pasteurized after concentration. In the ‘534 process, pasteurization is done prior to concentration (see column 4, line 72 et seq.). One of ordinary skill would clearly expect that a product that is pasteurized and then concentrated through a system such as described in the ‘534 patent would have much higher microbial levels than the product as now claimed.

Rejections under 35 USC 103

The rejection of the claims as obvious is obviated for the same reasons stated in connection with the anticipation rejection. There would be no motivation to change the process of the ‘534 patent to obtain the concentrated and frozen concentrated egg product.

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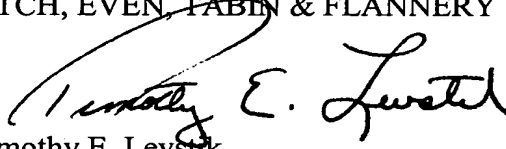
Conclusion

In view of the amendments and remarks made herein, applicant respectfully requests that the application be passed to issue.

The Commissioner is hereby authorized to charge any additional fees which may be required in this application to Deposit Account No. 06-1135.

Respectfully submitted,

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